WHAT IS CLAIMED IS:

1. A microporous membrane for use in separation processes, said microporous membrane comprising domains of a first polymer component uniformly distributed in a matrix of a second polymer component, said second polymer component matrix comprising a three-dimensional network of uniformly distributed, interconnected microcracks of uniform dimension having a mean pore size of about 1 nanometer to about 200 nanometers and having a porosity of about 5 percent to about 40 percent, said membrane prepared from a film-forming composition, said film-forming composition consisting essentially of a mixture of

a first polymer component in an amount of from about 1 percent by weight to about 25 percent by weight, and

a second polymer component immiscible with said first polymer component and blended therewith, said second polymer component present in an amount ranging from about 65 percent by weight to about 99 percent by weight.

2. The microporous film of claim 1 wherein said mean pore size of said microcracks is about 1 to about 10 nanometers.

3. The microporous film of claim 1 wherein said mean pore size of said microcracks is about 10 to about 20 nanometers.

4. The microporous film of claim 1 wherein said first and second polymer components are independently selected from amorphous, semicrystalline, hydrophilic or hydrophobic.

5. The microporous film of claim 1 wherein said first and second polymer components are independently selected from a polyolefin, polystyrene or a polyester

6. The microporous film of claim 5 wherein said polyolefin is polypropylene, polyethylene, or poly(4-methyl-1-pentene).

7. The microporous film of claim 1 wherein said first polymer component is 15 percent by weight poly(ethylene terephthalate) and said second polymer component is 85 percent by weight polypropylene.

8. The microporous film of claim 1 wherein said first polymer component is 10 percent by weight polystyrene and said second polymer component is 90 percent by weight polypropylene.

9. The microporous film of claim 1 further comprising about 0.5 percent to about 25 percent by weight of a compatibilizing block copolymer.

10. The microporous film of claim 9 wherein said compatibilizing block copolymer is SEEPS, said first polymer is polystyrene and said second polymer is polypropylene.

11. The microporous film of claim 10 comprising about 10% by weight polystyrene, 90% by weight polypropylene, and about 5 percent by weight thereof SEEPS.

12. The microporous film of claim 10 comprising about 15% by weight polystyrene, 85% by weight polypropylene, and about 7.5 percent by weight thereof SEEPS.

13. A method for the preparation of a microporous membrane useful in separation processes, said microporous membrane comprising domains of a first polymer component uniformly distributed in a matrix of a second polymer component, said second polymer component matrix comprising a three-dimensional network of uniformly distributed, interconnected microcracks of uniform dimension having a mean pore size of about 1 nanometer to about 200 nanometers and having a porosity of about 5 percent to about 40 percent, said method comprising:

A. preparing a film-forming composition, said film forming composition consisting essentially of a mixture of

a first polymer component in an amount of from about 1 percent by weight to about 35 percent by weight,

a second polymer component immiscible with said first polymer component and blended therewith, said second polymer component present in an amount ranging from about 65 percent by weight to about 99 percent by weight;

B. preparing a film from the composition of step A; and

C. subjecting the film prepared in step B to a stretching procedure whereby said film is stretched at least 100% beyond the unstretched dimensions,

whereby the final microporous membrane is formed.

14. The method of claim 13 wherein said film is prepared by a casting process.

15. The method of Claim 13 wherein said film is prepared by spray application of said composition to a substrate.

16. The method of Claim 13 wherein said film is prepared by extrusion.

17. The method of Claim 13 wherein said stretching procedure comprises a first cold stretching step followed by at least one hot stretching step.

18. The method of Claim 17 wherein said cold stretching step is performed at a temperature of from about 15 C to about 25 C, and said film is thereby stretched to from about 20% to about 30% above its original dimension.

19. The method of Claim 17 wherein said hot stretching step is performed at a temperature ranging from about 10 C to about 15 C below the glass transition temperature of the first polymer component, said hot stretching performed to the attainment of a final dimension ranging from about 100% to about 400% of the original dimension of the unstretched film.

20. The method of claim 17 wherein said film is further treated by annealing under tension at a temperature of about 5 C to about 10 C higher than the hot stretching step, but below the glass transition temperature of said first polymer component.

21. The method of claim 13 wherein said mixture further comprises a compatibilizing block copolymer.

22. The method of Claim 21 wherein said film forming composition is prepared by the simultaneous mixture of said polymer components.

23. The method of Claim 21 wherein said film forming composition is prepared by the premixture of said first polymer component and said compatibilizing block copolymer, and the subsequent mixture thereof with said second polymer component.

24. The process of claim 21 wherein said film is prepared by a casting process.

25. The method of Claim 21 wherein said film is prepared by spray application of said composition to a substrate.

26. The method of Claim 21 wherein said film is prepared by extrusion.

27. The method of Claim 21 wherein said stretching procedure comprises a first cold stretching step followed by at least one hot stretching step.

28. The method of Claim 27 wherein said cold stretching step is performed at a temperature of from about 15 C to about 25 C, and said film is thereby stretched to from about 20% to about 30% over its original dimension.

29. The method of Claim 27 wherein said hot stretching step is performed at a temperature ranging from about 10 C to about 15 C below the glass transition temperature of the first polymer component, said hot stretching performed to the attainment of a final dimension ranging from about 100% to about 700% of the original dimension of the unstretched film.

30. The method of claim 27 wherein said film is further treated by annealing under tension at a temperature of about 5 C to about 10 C higher than the hot stretching step, but below the glass transition temperature of said first polymer component.

31. A microporous membrane for use in separation processes, said microporous membrane comprising domains of a first polymer component uniformly distributed in a matrix of a second polymer component, said second polymer component matrix comprising a three-dimensional network of uniformly distributed, interconnected microcracks of uniform dimension with a mean pore size of about 1 nanometer to about 200 nanometers and a porosity of about 5 percent to about 40 percent, said microporous membrane prepared by the steps of:

A. preparing a film-forming composition, said film forming composition consisting essentially of a mixture of

a first polymer component in an amount of from about 1 percent by weight to about 35 percent by weight,

a second polymer component immiscible with said first polymer component and blended therewith, said second polymer component present in an amount ranging from about 65 percent by weight to about 99 percent by weight;

B. preparing a film from the composition of step A; and

C. subjecting the film prepared in step B to a stretching procedure whereby said film is stretched at least 100% beyond the unstretched dimensions,

whereby the final microporous membrane is formed.

32. The microporous membrane of claim 31 wherein said film is prepared by a casting process.

33. The microporous membrane of Claim 31 wherein said film is prepared by spray application of said composition to a substrate.

34. The microporous membrane of Claim 31 wherein said film is prepared by extrusion.

35. The microporous membrane of Claim 31 wherein said stretching procedure comprises a first cold stretching step followed by at least one hot stretching step.

36. The microporous membrane of Claim 35 wherein said cold stretching step is performed at a temperature of from about 15 C to about 25 C, and said film is thereby stretched to from about 20% to about 30% of its original dimension.

37. The microporous membrane of Claim 35 wherein said hot stretching step is performed at a temperature ranging from about 10 C to about 15 C below the glass transition temperature of the first polymer component, said hot stretching performed to the attainment of a final dimension ranging from about 100% to about 400% of the original dimension of the unstretched film.

38. The microporous membrane of claim 35 wherein said film is further treated by annealing under tension at a temperature of about 5 C to about 10 C higher than the hot stretching step, but below the glass transition temperature of said first polymer component.

39. The microporous membrane of claim 31 wherein said mixture further comprises a compatibilizing block copolymer.

40. The microporous membrane of Claim 39 wherein said film forming composition is prepared by the simultaneous mixture of said polymer components.

41. The microporous membrane of Claim 39 wherein said film forming composition is prepared by the premixture of said first polymer component and said compatibilizing block copolymer, and the subsequent mixture thereof with said second polymer component.

42. The microporous membrane of claim 39 wherein said film is prepared by a casting process.

43. The microporous membrane of Claim 39 wherein said film is prepared by spray application of said composition to a substrate.

44. The microporous membrane of Claim 39 wherein said film is prepared by extrusion.

45. The microporous membrane of Claim 39 wherein said stretching procedure comprises a first cold stretching step followed by at least one hot stretching step.

46. The microporous membrane of Claim 45 wherein said cold stretching step is performed at a temperature of from about 15 C to about 25 C, and said film is thereby stretched to from about 20% to about 30% of its original dimension.

47. The microporous membrane of Claim 45 wherein said hot stretching step is performed at a temperature ranging from about 10 C to about 15 C below the glass transition temperature of the

first polymer component, said hot stretching performed to the attainment of a final dimension ranging from about 100% to about 700% of the original dimension of the unstretched film.

48. The microporous membrane of claim 45 wherein said film is further treated by annealing under tension at a temperature of about 5 C to about 10 C higher than the hot stretching step, but below the glass transition temperature of said first polymer component.